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| APPLICATION NO. | FILING DATE | FIRST NAMED INVENTOR | ATTORNEY DOCKET NO. | CONFIRMATION NO. |
|-----------------|-------------|----------------------|---------------------|------------------|
| 10/665,509      | 09/17/2003  | Hisashi Tsukamoto    | Q137-US9            | 5825             |

31815 7590 06/25/2008  
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| EXAMINER |
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WALKER, KEITH D

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| ART UNIT | PAPER NUMBER |
|----------|--------------|

1795

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| MAIL DATE | DELIVERY MODE |
|-----------|---------------|

06/25/2008

PAPER

**Please find below and/or attached an Office communication concerning this application or proceeding.**

The time period for reply, if any, is set in the attached communication.

## Office Action Summary

Application No.

10/665,509

Applicant(s)

TSUKAMOTO ET AL.

Examiner

KEITH WALKER

Art Unit

1795

**-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --**  
**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period **will** apply and **will** expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply **will**, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

### Status

- 1) ☒ Responsive to communication(s) filed on 17 September 2007.
- 2a) ☒ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

### Disposition of Claims

- 4) ☒ Claim(s) 58,59 and 66-87 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 58,59 and 66-87 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

### Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

### Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some \* c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

### Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO/SB/08)  
Paper No(s)/Mail Date \_\_\_\_\_.
- 4) ☐ Interview Summary (PTO-413)  
Paper No(s)/Mail Date: \_\_\_\_\_.
- 5) ☐ Notice of Informal Patent Application
- 6) ☐ Other: \_\_\_\_\_.

***Detailed Action***

***Remarks***

Claims 58, 59 & 66-87 are pending examination as discussed below.

***Claim Rejections - 35 USC § 103***

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

1. Claims 58, 59, 66-71, 84, 86 & 87 are rejected under 35 U.S.C. 103(a) as being unpatentable over US Patent 5,501,916 (Teramoto) in view of US Patent 6,399,242 (Kitoh).

With respect to claims 58 & 70, Teramoto discloses a method of forming a lithium battery comprising arranging the positive electrode in electrical communication with a winding core (48) (pin), insulating the negative electrode from the core, spirally winding the electrode around the core, transporting the electrolyte through the opening of the battery case and sealing the opening with the battery lid (47). The winding core extends through an end cap (47) that is electrically insulated from the case (45). See Example 2 and Figure 9.

With respect to claim 59, Teramoto discloses the electrolyte is injected into the case before the battery cap is sealed. See Example 2.

With respect to claim 71, the spiral wound electrodes includes a separator (43). See Example 2.

With respect to claim 84, Teramoto teaches the positive electrode is in electrical commutation with the terminal core via a weld (52). See Example 2.

With respect to claim 86, Teramoto teaches the end cap is caulked in position by an insulating gasket coated with asphalt. See Example 2.

With respect to claim 87, Teramoto teaches the use of a nickel-plated iron battery case. See Example 2.

The electrode tabs are welded to the end caps (Fig. 1 & 2; 1:15-29).

Teramoto is silent to a second end cap in electrical communication with the second electrode and attaching a flat portion of the tab to an inner face of the second end cap, where the tab extends past a center point of the second end cap.

Kitoh teaches a second end cap electrically attached to the second electrode and attaching a tab such that the flat portion of the tab is attached to the inner face of the second end cap, such that the tab extends past a center point of the second end cap (Fig. 2; 4:39-68). The tabs are connected for a distance less than the radius. This configuration allows for the two leads to be located on the same side of the battery and allows the battery to have excellent reliability and have low processing costs (Abstract). Furthermore, a reduction in the battery's internal resistance is realized (2:20-25).

Therefore it would have been obvious to one of ordinary skill in the art at the time the claimed invention was made to modify the tabs of Teramoto with the connecting tab

locations taught by Kitoh to decrease the internal resistance of the battery and produce a reliable battery with lower production costs.

2. Claims 58 & 72-83 are rejected under 35 U.S.C. 103(a) as being unpatentable over US 4,053,687 (Coibion) in view of US 6,033,795 (Broussely).

Coibion teaches a method of making a spiral wound battery with a pin extending from a first opening in the case. An electrode is electrically attached to the pin and a second electrode is attached to the second end cap. The electrolyte is filled in the second opening and sealed with the second end cap (Abstract, Fig. 9; 5:65-6:35). The electrodes are wound around a slotted pin and the electrode tabs are welded to the pin (Fig. 6 & 8; 5:20-65).

Coibion is silent to a mandrel used with the pin, such that the electrodes are wrapped around the pin and the mandrel.

Broussely teaches spiral wound electrochemical cell having an inner wall for improving the safety of the battery (Abstract). The electrode group is wound around a hollow mandrel tube that is perforated so the gases can more easily be exhausted from the battery. The mandrel is attached to the center pin by crimping (Fig. 6-8; 2:30-40, 6:50-7:10). Welding two components together is a well known means of attachment, and while crimping the mandrel to the pin is taught by Broussely, it would be obvious to one skilled in the art to use a welding means for attachment since welding provides a physically stronger hold and an electrically better connection. While Broussely is silent to a longitudinal slot in the mandrel, it would be obvious to one skilled in the art at the

time of the invention to incorporate a slot in the mandrel so it would allow the electrode of Coibion to pass through to the center pin.

Therefore it would have been obvious to one of ordinary skill in the art at the time the claimed invention was made to modify the pin of Coibion with the mandrel of Broussely in order to improve the safety of the battery by allowing a means of escape for the internal gas of the battery.

Regarding claim 78, Broussely is silent to using titanium for the mandrel, it would be obvious to one skilled in the art to choose a material for its intended purpose based on the characteristics of the material. In the case of titanium, the material is strong, light and corrosion resistant. As no criticality is given to the use of titanium, it would be obvious to one skilled in the art to use titanium for its inherent characteristics.

3. Claim 85 is rejected under 35 U.S.C. 103(a) as being unpatentable over Teramoto (US 5,501,916) in view of US Patent 6,399,242 (Kitoh) as applied to claims 58, 59, 70, 71, 84, 86 & 87 above, and further in view of Cogan (US 5,755,759).

The teachings of Teramoto and Kitoh as discussed above are incorporated herein.

Teramoto is silent to the use of Pt-Ir alloy as the pin.

Cogan teaches a biomedical device wherein the wire electrode is made of Pt-Ir alloy because it can record or stimulate physiological function (3:43-56).

Therefore, it would have been obvious to one of ordinary skill in the art to use Pt-Ir alloy as the pin onto the battery of Teramoto, because Conga teaches the alloy can be used in implantable medical device.

### ***Double Patenting***

The nonstatutory double patenting rejection is based on a judicially created doctrine grounded in public policy (a policy reflected in the statute) so as to prevent the unjustified or improper timewise extension of the "right to exclude" granted by a patent and to prevent possible harassment by multiple assignees. A nonstatutory obviousness-type double patenting rejection is appropriate where the conflicting claims are not identical, but at least one examined application claim is not patentably distinct from the reference claim(s) because the examined application claim is either anticipated by, or would have been obvious over, the reference claim(s). See, e.g., *In re Berg*, 140 F.3d 1428, 46 USPQ2d 1226 (Fed. Cir. 1998); *In re Goodman*, 11 F.3d 1046, 29 USPQ2d 2010 (Fed. Cir. 1993); *In re Longi*, 759 F.2d 887, 225 USPQ 645 (Fed. Cir. 1985); *In re Van Ornum*, 686 F.2d 937, 214 USPQ 761 (CCPA 1982); *In re Vogel*, 422 F.2d 438, 164 USPQ 619 (CCPA 1970); and *In re Thorington*, 418 F.2d 528, 163 USPQ 644 (CCPA 1969).

A timely filed terminal disclaimer in compliance with 37 CFR 1.321(c) or 1.321(d) may be used to overcome an actual or provisional rejection based on a nonstatutory double patenting ground provided the conflicting application or patent either is shown to be commonly owned with this application, or claims an invention made as a result of activities undertaken within the scope of a joint research agreement.

Effective January 1, 1994, a registered attorney or agent of record may sign a terminal disclaimer. A terminal disclaimer signed by the assignee must fully comply with 37 CFR 3.73(b).

4. Claims 58, 59 & 66-87 are rejected on the ground of nonstatutory obviousness-type double patenting as being unpatentable over claims 66-91 of U.S. Patent No. 7,378,181 in view of US 6,399,242.

Although the conflicting claims are not identical, they are not patentably distinct from each other because both applications claim the process of forming a battery that will have to be hermetically sealed by the end cap to prevent the degradation of the

electrodes and electrolyte. The instant application recites two end caps electrically attached to two different electrodes and the '379 application does not. However, as discussed in the above rejection, it is well known in the art to use two end caps having different electrical poles.

### ***Response to Arguments***

Applicant's arguments, see Pre-Appeal Brief, filed 3/12/08, with respect to the rejection(s) of claim(s) 58 under Teramoto have been fully considered and are persuasive. Therefore, the rejection has been withdrawn. However, upon further consideration, a new ground(s) of rejection is made in view of Teramoto in view of Kitoh.

### ***Conclusion***

Any inquiry concerning this communication or earlier communications from the examiner should be directed to KEITH WALKER whose telephone number is (571)272-3458. The examiner can normally be reached on Mon. - Fri. 8am - 5pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Patrick Ryan can be reached on 571-272-1292. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.



Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

K. Walker

/PATRICK RYAN/

Supervisory Patent Examiner, Art Unit 1795